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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,675	07/15/2003	David Punsalan	200210251-1	9644

22879 7590 07/25/2006

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EXAMINER

YUAN, DAH WEI D

ART UNIT PAPER NUMBER

1745

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/620,675	PUNSALAN ET AL.	
	Examiner	Art Unit	
	Dah-W i D. Yuan	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 19-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 3 and 10-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07152003</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1745

**SYSTEM AND A METHOD FOR MANUFACTURING AN ELECTROLYTE
USING ELECTRODEPOSITION**

Examiner: Yuan

S.N. 10/620,675

Art Unit: 1745

July 19, 2006

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-18, in Paper filed June 22, 2006 is acknowledged. Therefore, claims 19-54 are withdrawn from consideration.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,2,4-9,14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schucker (US 2002/0172871 A1) in view of Takeuchi et al. (US 2001/0014420 A1).

With respect to claims 1,4-7,16-18, Schucker teaches a method of manufacturing a composite electrolyte comprising coupling a porous substrate to an electrode and applying, via electrophoretic deposition, an ionic conductive composition on said substrate. The composition encompasses NASICON ($\text{Na}_3\text{Zr}_2\text{Si}_2\text{PO}_{12}$). See Paragraphs 31-33. However, Schucker do not teach specifically teach the ionic conductive composition is a polymeric electrolyte, such as a perfluorosulfonate ionomers. Takeuchi et al. teach an ionic conductive material for use as a membrane in a fuel cell can be an inorganic compound such as NASICON or a polymeric compound, such as Nafion (a perfluorosulfonate ionomers material). See abstract, Paragraph

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118. Therefore, it would have been obvious to one of ordinary skill in the art to substitute a perfluorosulfonate ionomers for the NASICON as the electrolyte on the porous substrate of Schucker, because Nafion and NASICON are considered functionally equivalent ionic conductive material.

With respect to claim 2, the porous substrate, such as yttria-stabilized zirconia, is an ionic conductive material.

With respect to claims 8,9, the disclosure of Schucker and Takeuchi differs from Applicant's claims in that Schucker and Takeuchi et al. do not teach the removal of the deposited perfluorosulfonate ionomers by machining with a blade. Nevertheless, Schucker teach the uniform thickness of the electrolyte is preferred. See Paragraph 52. Therefore, it would have been obvious to one of ordinary skill in the art to remove the excess perfluorosulfonate ionomer particles on the surface of the porous substrate by using a knife (blade), because Schucker teaches the uniform thickness of the electrolyte is preferred.

With respect to claims 14,15, Schucker teaches the use of titanium oxide, which is non-electrical conductive.

Allowable Subject Matter

4. Claims 3,10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 3,10-13 would be allowable because the prior art does not disclose or suggest the conductive porous substrate comprises a porous stainless steel substrate.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan
July 19, 2006



DAH-WEI YUAN
PRIMARY EXAMINER